

12. *C. Ridingsii* Bland, Tenn.
13. *Cremastochilus leucostictus* Burm. male.
14. *Cremastochilus leucostictus* Burm. female.

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THE LARGEST OAK-GALL IN THE WORLD AND ITS PARASITES.

BY WILLIAM H. ASHMEAD.

Some two or more years ago, February 20, 1897, the National Museum received from Dr. A. Duges, of Guanajaro, Mexico, the largest oak-gall it has ever been my pleasure to see, and which is undoubtedly the largest Cynipid gall yet discovered. Subsequently additional specimens of the same species, but much smaller and exceedingly variable in shape and size, were also received from Dr. Duges.

The first and largest specimen received, and which is unquestionably the largest oak-gall in the world, is of an irregular oblong, globular shape, and measures fully $4\frac{1}{2}$ inches long by 3 inches in diameter. Externally it is opaque, more or less roughened, and of a greyish color or somewhat similar in color to the bark of our common white oak; white internally it is brown and of a dense, hard, pithy substance. It is polythalamous; the larvæ cells being numerous and deeply imbedded, in the interior of the gall, as in those of similar structure.

The other specimens, afterwards received from Dr. Duges, are, as stated before, much smaller, more irregular in shape, and dwindle down in size to specimens not exceeding an inch in diameter. All of them, as we are reliably informed by Dr. Duges, were obtained from the roots of an unknown Mexican oak tree.

At the time of the receipt of the largest of these galls, I reported the gall was the product of an undescribed Cynipid, which would probably prove to belong to the genus *Andricus*.

The rearing of three of the gall-flies by Dr. Duges confirms my opinion in reference to the generic position of the gall-makers of this gigantic gall, but the gall itself is evidently similar to one described as *Cynips Championi* by Mr. Peter Cameron, in *Biologia Centrali-Americana*, Hymoptera, vol. I, p. 70, the maker of which was unknown.

Dr. Duges also bred from this gall two distinct parasites: an inquiline, *Synergus* sp., and a Torymid, *Torymus* sp.; also a

beautiful undescribed rhynchophorus beetle. The last the late Mr. Martin Linell had intended to describe under the name of ———

I believe with Dr. Calvert, that a name given to a gall alone, without a knowledge of the gall-maker, will hold in most cases, but such descriptions should be discouraged, since the identification of galls, without their makers, is always attended with uncertainty ever afterwards.

It is so in this case, but the name given by Mr. Cameron must be retained, and I give below, for the first time, the description of its maker, and its parasites.

Andrieus championi Cameron

Cynips championi Cam. Biol. Centr.—Am. Hym I, p. 70. (Gall).

Gall-fly.—♀ Length 4.5 mm. Black, the abdomen and anterior and middle femora rufous. Head and thorax rugoso-punctate, clothed with a sparse, glittering pubescence; abdomen smooth, polished, impunctate, the sides of segments 1-7 with sparse glittering hairs, antennæ 14 jointed, long, filiform, black, the third joint the longest, more than six times as long as thick, the following joints to the 13th, gradually shortening, the 13th joint being scarcely one-third the length of the third joint, the last joint almost as long as 12-13 united. Clypeus rounded at apex. Mandible strong, tridentate, piceous black, the inner tooth minute, the middle and outer tooth large, subequal. Mesothorax with the parapsidal furrows distinct and posteriorly becoming obliterated just before attaining the base of the scutellum; a median furrow only slightly or vaguely defined on the middle of the disk; anteriorly close to the margin are two short, glabrous lines; while the scapulae have a long glabrous line; scutellum rounded, rugose, the foveae at base with raised lines; metathorax short, with too median carinae. Wings hyaline, the veins piceous-black, the vein at base of the open marginal being short and strongly angulated. Abdomen ovate, as long as the head and thorax united, polished impunctate except some sparse punctures on the sides of the seventh segment; sheaths of ovipositor black, not at all prominent.

Hab—Guanajuato, Mexico.

Type, No. 4304 U. S. N. M.

Described from 3 ♀ specimens, received from Dr. A. Duges.
Synergus Dugesi, n. sp.

♀—Length 3mm. Black, head, except the vertex, eyes, and occiput, the antennæ, the pronotum, except anteriorly, the trochanters, the knees, the tips of anterior and middle tibiæ and beneath, and their tarsi, brownish-yellow. Head rugoso-punctate, the face and cheeks with strong converging striae. Mandibles ferruginous, black at tips. Antennæ 13-jointed the third joint very nearly as long as 4-5 united. Mesonotum rather coarsely, transversely rugulose, the parapsidal furrows very nearly obliterated by the coarseness of the sculpture. Mesopleura longitudinally striated. Metanotum short oblique, with two, rather widely separated, median carinae and a distinct lateral carina, the angles prominent, pubescent, with prominent spiracles. Wings hyaline, the tegulae piceous, the veins, except the subcostal and the median veins towards base which are pale yellowish piceous black. Abdomen ovate, about one-third longer than the head and thorax united, highly polished, black, the second segment, except the very short petiole, occupying the whole surface, the terminal segments being retracted.

♂—Length 2.6 mm. Agrees well with the ♀, except the sides of the pronotum, the mesopleura, but not the mesopectus and the legs, except a dusty shade on the hind tibiæ and tarsi, are wholly brownish yellow; the parapsidal furrows are distinct, the tegulae brownish-yellow, while the antennæ are 15-jointed, the third joint being somewhat thickened, slightly curved and fully as long as joints 4-5 united, the following joints subequal.

Type, No. 4305 U. S. N. M.

Described from 1 ♂ and 2 ♀ specimens, bred by Dr. A. Duges from *Andricus* (*Cynips*) *Championi Cam.*

Torymus Mexicanus, n. sp.

♀.—Length 4 mm.; ovipositor 6.5 mm. Head and thorax metallic green, the hind margin of the mesopleura violaceous followed by a bright cupreous band; abdomen bronzed-black; flagellum black; scape, tegulae and tarsi brownish-yellow; coxæ metallic green; anterior femora towards base and the hind femora except tips, metallic brown, the rest of the legs rufous wings hyaline, the veins, except the subcostal at base,

dark brown. Head shagreened and punctate, the face clothed with a white pubescence; mandibles ferruginous, the teeth black. Thorax sparsely pubescent, transversely shagreened and punctured, the punctures more distinct and coarser along the hind margin of the pronotum, on the parapsides along the furrow of same, and on the scutellum. Mesopleura except the hind margin sculptured, the hind margin smooth, impunctate. Hind coxæ large, reticulately sculptured. Abdomen finely or microscopically reticulated, the dorsal flap bluish.

♂.—Length 3.2 mm. Agrees well with the ♀ in color and in the structure of the head and thorax, but the tegulæ and the femora are bluish-green, the tibiæ dark brown, the tarsi, except the terminal joint, whitish, while the abdomen is bluish-green scarcely as long as the thorax, with the dorsal flap bright green.

Type, No. 4306 U. S. N. M.

Described from 1 ♀ bred from the small gall.

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RECOLLECTIONS OF OLD COLLECTING GROUNDS.

BY H. F. WICKHAM, Iowa City, Iowa.

IX. *The Alpine Districts about Leadville.*

Leaving Buena Vista, the railroad follows the Arkansas Valley very closely in the long climb to Leadville. As the mountain summits draw nearer and nearer the waters of the turbulent stream become ever less muddy and by the time the great mining camp is reached the dwindled Arkansas is transformed into a clear brook, flowing over a pebbly bed or gliding more slowly on a torturous course through broad marshy meadows. The altitude has now exceeded ten thousand feet and the fauna and flora are essentially modified in consequence.

We arrived at the station late in the afternoon of July 7th, during a heavy rain. Every afternoon of our eight day sojourn was marred by a like precipitation of moisture and this detracted materially from the pleasure of the trip as well as interfering with collecting. These showers are very cold and quickly result in benumbed hands which are slow to grasp the ground-inhabiting insects, and the saturated dripping foliage precludes successful use of the sweep-net or umbrella. The little butterflies (apparently some species of *Lycæna*) fold